66-97

7 January 1966

MEMORANDUM FOR: Director of Central Intelligence

SUBJECT   :   Visit to CIA of Knox Panel

PFIAB/NSC Review Completed.

1. This is to alert you concerning the forthcoming visit
of the Knox Panel and to recommend (para. 7) that you host a
lunch for them during the course of that visit.

2. The Knox Panel is a group organized pursuant to a
recommendation made by the President's Foreign Intelligence
Advisory Board. It reports jointly to that Board and to
Dr. Hornig, Special Assistant to the President for Science
and Technology.

3. The mission of the Knox Panel is:

   a. To provide guidance to the intelligence
      community in the forwarding of methods and
      facilities for information handling and access;
      and,

   b. To evaluate in technical terms the true meaning
      of the enormous and somewhat heterogeneous
      growth of the intelligence community's information
      pool.

4. Over the last two months the Panel's chairman,
Mr. William T. Knox, has been given extensive orientation
briefings by various Agency components. The Panel itself is
now coming for briefings. We have specifically been asked
to cover two matters at this time:

   a. Collection guidance
      (CIA's Collection Guidance Staff and DIA's
      Office of Collection Management)

   b. CIA's Office of Central Reference
      (includes handling incoming and outgoing
      information and the procurement and
      exploitation of foreign language publications)

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5. We are firming up plans to have the Panel here at Headquarters from 1600 to 2100 on Thursday 13 January (including dinner in the Executive Dining Room), and again from 0900 to 1530 the next day, Friday 14 January.

6. At the Thursday dinner I plan to have the Panel joined by those essentially involved in the briefings that day.

7. I believe it is highly desirable for the Panel to have an opportunity to meet some of your top assistants and suggest this be done at the Friday lunch. I recommend that you host this lunch and that it be held in the Executive Dining Room to enable us to accommodate some 18 people (roughly half guests and half CIA officials).

25X1

PAUL A. BOREL
Assistant Deputy Director for Intelligence

Attachments
TAB A: Membership of Knox Panel
TAB B: Background Papers Relating to Organization of Panel (see particularly bottom p. 5 and p. 6)

cc: D/DCI/NIPE

TAB A

PFIAB/OST JOINT GUIDANCE AND EVALUATION PANEL

CHAIRMAN

Mr. William T. Knox
Technical Assistant to the Director
Office of Science and Technology

MEMBERS

Dr. William O. Baker
Vice President for Research
Bell Telephone Laboratories

Dr. Launer F. Carter
Vice President – Research
System Development Corporation

Dr. Merrill M. Flood
Professor and Senior Research
  Mathematician
University of Michigan
  Medical School
Project MAC

Dr. Ralph W. Gerard
Dean of the Graduate Division
University of California, Irvine

Dr. Anthony G. Oettinger
Professor of Linguistics
The Harvard University

Dr. Richard C. Raymond
Consultant – Information
General Electric Company

Dr. Oliver Selfridge
Associate Director, Project MAC
Lincoln Laboratory

Dr. Jerome B. Wiesner
Dean of Science
Massachusetts Institute of
  Technology

EXECUTIVE SECRETARY
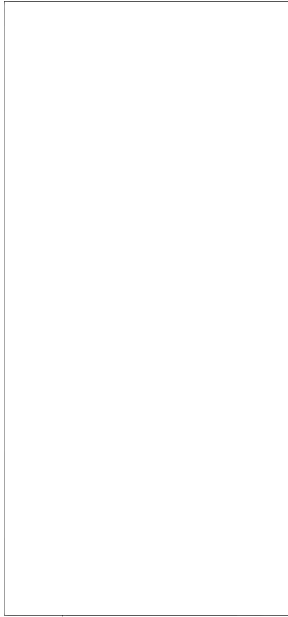
Mr. Thomas McFee
Institute for Defense Analysis

OBSERVERS

Mr. Bernard Urban
Bureau of Budget

Mr. John Griffith
IBM Corporate Research

Page Denied

BRIEFINGS GIVEN TO

MR. WILLIAM T. KNOX

Coverage	Briefer
NIPE	John Bross
CIA & DDI	Paul Borel
ONE	Sherman Kent
OCI	R. J. Smith
CRR	William Morell
OBI	James Brammell
NPIC	Arthur Lundahl
DCS	Edwin Ashcraft
FBIS	
CSI	
OCS	
CRD/AN	
FMSAC	
COMB Support Staff	
Project CHIVE	
CCR/FDD	
CGS	
OELSCEN	
DDP/	
DDP/	
PPB	

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OCMMC   [   ]   25X1

DDS&T   Albert Wheelon

DDS&T Requirements   [   ]   25X1

CCR   John Vance

TAB B

Attachment (a)

THE WHITE HOUSE

WASHINGTON

SECRET

July 15, 1965

Executive Registry

65 - 4126/1

MEMORANDUM FOR THE DIRECTOR OF CENTRAL INTELLIGENCE

SUBJECT: U. S. Intelligence Community Capabilities
          for the Handling of Intelligence Information

     Enclosed herewith is a report and recommendations
which the President's Foreign Intelligence Advisory Board
submitted to the President under date of June 15, 1965.

     The President has approved the three recommendations
contained in the report.

     It is requested that Recommendations 1 and 2 of the
report be carried out by the intelligence community
under your coordination, and that you submit to this
office and to the President's Board by October 1, 1965
a progress report reflecting the actions taken.

     With respect to Recommendation No. 3, this office
will look to the President's Foreign Intelligence Advisory
Board and the Special Assistant to the President for
Science and Technology, for periodic reports concerning
the activities of the Panel to be established pursuant
to that recommendation. To assure proper linkage of the
Panel with the broader interests of the Bureau of the
Budget in automatic data-processing generally, it is
suggested that the Director of the Bureau of the Budget
designate a representative of the Bureau to maintain
liaison with the Panel.

                                        McGeorge Bundy

Enclosure

cc: The Secretary of State
     The Secretary of Defense
     The Director, Bureau of the Budget
     The Special Assistant to the President
         for Science and Technology
     The Chairman, President's Foreign Intelligence
         Advisory Board

SECRET

THE WHITE HOUSE

WASHINGTON

PRESIDENT'S FOREIGN INTELLIGENCE ADVISORY BOARD

June 15, 1965

MEMORANDUM FOR THE PRESIDENT

SUBJECT: U. S. Intelligence Community Capabilities
for the Handling of Intelligence Information

This report is based on a study made by the Communications
Panel of the President's Foreign Intelligence Advisory Board.
The study included consultations with knowledgeable
representatives of the departments and agencies making up
the U. S. intelligence community, and briefings supplied by
the Committee on Documentation of the United States Intel-
ligence Board (USIB) which, under the chairmanship of the
Director of Central Intelligence, has been pursuing the
current exercise known as SCIPS (Staff for Community
Information Processing Study).

Our Panel's study leads us to the following conclusions
and resultant recommendations for action in an area of
U. S. intelligence activities which we consider to have a
most important bearing on the national defense and security.

The principal objective of these recommendations is
the prompt initiation by the U. S. intelligence community
of positive steps toward the achievement of an improved
capability for the efficient storage and retrieval of the
intelligence product, through an appropriate combination
of machine and human techniques for the management and control
of the massive volume of intelligence information involved.

CONCLUSIONS:

1. Information-handling methods occupy a pervasive
position in the whole administrative framework of the U. S.
intelligence community. Present methods for handling the
huge quantity of intelligence information, which is generated
from day-to-day by a vast array of collection resources,
are a determining factor in the effectiveness of our entire
intelligence system to meet national security needs at
policy and command levels of the Government.

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2. The systems problems involved are so massive and in many cases so expensive, in both money and human resources, that customary routines have often been rigidly embodied and retained. The systems problems of intelligence information access will continue to be of the most difficult type, heightening the importance of great improvements in the depth of understanding and of skills in tackling the wide variety of such problems which confront all levels of Government personnel concerned with access to the national intelligence base.

3. There is a necessary relationship of the United States Intelligence Board SCIPS study to the existing practices of information handling which are variously applied within the respective agencies engaged in the U. S. Intelligence effort, particularly in regard to such matters as file format and file control methods. However, the present great demands for effective handling of information within the intelligence community require that additional actions go forward concurrently with those presently approved by the United States Intelligence Board.

4. The additional actions which are required provide the only foreseeable means of extending to the massive operations of the intelligence community the advantages of high-speed machine processing of both numerical and non-numerical information in a way which has already been applied in such specific areas of intelligence as cryptanalysis. Unless strong and immediate actions are undertaken in this area, there is danger that the efficiency of the production and dissemination of intelligence within the intelligence community will decline progressively, and that the already high costs involved will climb so steeply as to jeopardize national support of the broad intelligence effort.

5. Positive action is required now to supplement the longer-range Task Force projects being pursued by the United States Intelligence Board. A large share of the needed technical support will come from automatic data-processing machinery and methods, and from the resources of modern science and technology which are presently available to assist in meeting intelligence community needs for document handling all the way from initial production to final distribution. The need for new intelligence community actions for the handling and routine processing of intelligence information is not regarded as a direct consequence of the rise of the electronic computer. The need for such actions is more deeply the result of the growth of the intelligence community effort and the greater growth of the information which it must handle.

The role of the computer is in offering a new way to assist in the reduction of greatly increasing problems in the intelligence field. The existence of these problems and the need to do things about them would have confronted the intelligence community in any event.

6. All the technical areas which must contribute to the problems of handling intelligence information are advancing very rapidly at present. The intelligence community, with its strong nucleus concerned with the use of computers in cryptanalytic and communications operations, has a real advantage in undertaking early and skillful planning in the information-handling area. (It would, however, be a mistake to assume that this experience can be easily applied to the use of computers in the handling of intelligence information.) The required planning and actions can be not only of great value to the intelligence community, but can be a broad and effective stimulus to improvement in other Federal Government computer operations whose importance is reflected in the President's recent message to the Congress on the use of automatic data-processing equipment.

7. The problems of the intelligence community in connection with information access and retrieval include, but are not restricted to, those common to all who must maintain very large bodies of information in accessible form. This is even true in the handling of information from un-classified sources. The importance of negative information, and of patterns of information, requires that access to intelligence information produce a completeness of response beyond that which is expected from many large files of stored information. Like statistics, intelligence cannot be satisfied with the highly anecdotal, but requires that all available items of information are allowed to contribute their part to the final summary or other intelligence product.

8. As a consequence of intelligence community require-ments for high recall, the mechanized and automated means of access to many sorts of intelligence files cannot be required to meet simultaneously, rigid requirements as to relevance. Accordingly for some time to come the mode of gaining access to intelligence information will be through combined machine-human systems that will seek the machine re-trieval of stored intelligence information in order that its relevance may be established by human examination. It is this combined machine-human factor which generates systems problems of great difficulty and dimensions.

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9. Ways and means must be sought by the intelligence community to enlarge the proficiency of personnel presently engaged in information-handling activities, either through (a) the retraining of personnel so engaged, or (b) the addition of new personnel having experience with systems work, preferably (but not necessarily) in the information sciences and technologies.

10. The scope of the intelligence community's problems in the information-handling field is such that it requires the guidance of a Panel of Technical Experts in the development of methods and facilities for information-handling and access.

11. In the area of experimental approaches to the adaptation of machine processing to the storage and retrieval of intelligence information, an encouraging beginning has been made within the National Security Agency where the Technical Information Processing System (TIPS) study is presently under way. This experiment, although on a limited scale and confined to a selected number of organizational units and information files within the National Security Agency, is producing important lessons for the achievement of a realistic system for the interrogation of a computer by remote users requiring access to a common information base.

RECOMMENDATIONS:

We recommend that the following actions be undertaken immediately within the intelligence community:

Recommendation No. 1: That selected personnel among the departments and agencies making up the U. S. intelligence community be provided specialized training and advanced studies at a university center or centers where systems thinking and systems skills are understood and imparted, and which at the same time possess adequate background in conventional bibliography and other more classical approaches to literature and information management.

An example of the type of specialized training center we have in mind is the Library School at the University of Chicago, headed by Dean Don W. Swanson. His background in mathematics and physical sciences, and his current emphasis on increased systems thinking in library education, accent the combination of educational capabilities and background which are considered necessary for purposes of meeting the objective of this recommendation.

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Arrangements involving this and perhaps other institutions might be made so that both senior administrative personnel and more junior operating people could acquire new abilities and attitudes which in the times ahead will be demanded in the discharging of responsibilities for the enormous file and distribution systems of the intelligence community./

Recommendation No. 2: That the Technical Information Processing System (TIPS) project, now under way within the National Security Agency, be expanded to include partici- pation by other member agencies of the intelligence community in an experimental operating system constituting a first step toward interagency (and interbuilding) information handling. Since results should be sought from the experi- ment as promptly as feasible, the participation of other agencies should be achieved by September of 1965; the capability for extensive handling of the Russian biography problem should be available in the community-wide system by the summer of 1966; and by the summer of 1967 it should be possible to exchange outputs from various mechanized sources in the fashion pioneered by the TIPS project.

/Only through such experimental operational trials can the intelligence community come to grips with the wide variety of program problems involved, including those of security compartmentation, the encryption of communications between the computer/ information base and the user locations, and other problems. In order to make such a trial effective, it may be necessary to expand the scope of the information maintained in the TIPS system and, if so, this should be done with caution as to the total amount of material thus added. The intention should be to establish a system that will in fact be used by workers in at least a few agencies as a better way to meet day-to-day tasks; however, the system should be regarded as experimental and there should be no attempt to insure that in its experimental form its operation can be economically justified./

Recommendation No. 3: That there be established a Panel, under the joint sponsorship of the Special Assistant to the President for Science and Technology and the President's Foreign Intelligence Advisory Board, having responsibility for: (a) providing guidance to the intelligence community in the forwarding of methods and facilities for information handling and access;
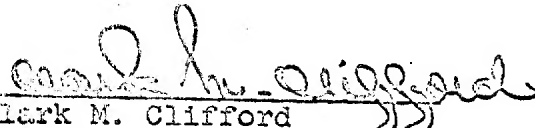
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(b) evaluating in technical terms the true meaning of the enormous and somewhat heterogeneous growth of the intelligence community's information pool.

/This recommended action is an urgent consequence of the USIB's Community Information Processing Study involving actions which, although helpful, are far from meeting the needs accented by the study. It is emphasized that the proposed panel of technical experts would not be tasked with the too obvious assignment of simply applying modern machine methods to the existing, specialized, and rigidly-maintained activities of processing and distributing information within the intelligence community. The panel would have the over-all task of guiding the necessarily large, and presently ignored, planning for the realistic and long-term development of mechanized facilities for the processing of information in the manifold forms in which it is encountered within the intelligence community. Thus, the composition of the panel and its individual skills should permit a concurrent approach to the overwhelming volumes of photographic, electrical and typographical material with which the intelligence system is presently flooded. It is noted that in such parts of the Government as the Bureau of the Budget, and in the Departments of State and Defense, attempts are being made to introduce automatic data-processing and information-handling systems into complex Government operations -- and the panel of technical experts could provide invaluable linkage among these detached efforts which now find some coherence only through the science and technical information people in the Office of Science and Technology and the Federal Council for Science and Technology. Finally, it is evident that the concept of the range of activities of the expert panel includes not only drawing on all the information-handling programs and activities in other parts of the Government, but also being available for over-all counsel in ways which might be especially useful to the Bureau of the Budget in understanding the role of mechanized information handling throughout the Executive Branch of the Government./

For the Board

Clark M. Clifford
Chairman